

R E M A R K S

This is in response to the final Official Action mailed May 8, 2002 for the above-identified patent application. A Request for Continued Examination under 37 C.F.R. § 1.114 is filed concurrently herewith. Claims 14 and 15 have been canceled. Claims 1, 4-13 are now pending in the application.

Claims 14-15 have been rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter that was not enabled by the specification as originally filed. In view of the cancellation of Claims 14 and 15, it is respectfully submitted that the rejection is moot.

Claims 1, 4, and 11-15 have been rejected under 35 U.S.C. § 103(a) as obvious in view of U.S. Patent No. 5,621,021 (Yoshioka et al.). The Examiner acknowledges that Yoshioka et al. does not teach a requirement of a particle size as recited in Claim 1, but takes the position that Yoshioka et al. discloses particles of size between 2-3 µm (Example 1) or 2-5 µm (Example 2) (Official Action of July 24, 2001, p. 4, lines 10-11). According to the Examiner, it would have been obvious to control the particle size of the colorant in view of Yoshioka et al.'s disclosure of the consequences of particle size which is "too small" (Official Action of July 24, 2001, p. 4, line 16) or "too large" ((Official Action of July 24, 2001, p. 5, line 1). The Examiner further states that U.S. Patent No. 5,976,232 (Gore) discloses that a narrow distribution of colorant particles improves the stability of the ink.

However, it is respectfully submitted that Claims 1, 4, and 11-13 are nonobvious and patentable in view of Yoshioka et al. Claim 1 expressly recites a particle

size distribution of 2 to 7 μm and wherein particles having a size of not more than 1.8 μm account for not more than 1.6% by weight of said colorant and wherein particles having a size of not less than 7 μm account for not more than 0.5% by weight of said colorant. In contrast, Yoshioka et al. does not disclose or suggest a size distribution as recited in Claim 1. In particular, neither Example 1 nor Example 2 of Yoshioka et al., which the Examiner relies on, discloses or suggests the size distribution recited in Claim 1. In Example 2, Yoshioka et al. discloses the use of "Epocolor FP-1050" (*see* Col. 5, lines 61-64). Applicants submit herewith a Declaration under 37 C.F.R. § 1.132 signed by the inventor Shinji Tsujo ('132 Declaration'), which states that in Epocolor EP-1050 particles having a size of not more than 1.8 μm account for 15.7% by weight of the colorant and particles having a size of not less than 7 μm account for 5.2% by weight of the colorant (*see* Comparative Example A in the 132 Declaration). Thus, Applicants respectfully disagree with the Examiner's conclusions that few, if any, the particles of Yoshioka et al. have a size less than 2 μm (Official Action of July 24, 2001, p.4, lines 17-20) or greater than 5 μm (Official Action of July 24, 2001, p.5, lines 4-5). Therefore, the disclosure of a "particle diameter of 2-3 μm " in Example 2 of Yoshioka et al. does not disclose or suggest the particles having a the size distribution recited in Claim 1, but merely indicates an approximate particle size distribution. Similarly, it is respectfully submitted that the disclosure of a "particle diameter of 2-5 μm " in Example 1 does not disclose or suggest the particles having the size distribution recited in Claim 1, but merely indicates an approximate particle size distribution, and that the Examiner has not shown that the particles of Example 1 have the size distribution recited in Claim 1. Furthermore, the

particle size distribution recited in Claim 1 is critical to the excellent erasability and ink dischargeability of the ink composition of the present invention. As shown in the enclosed 132 Declaration, an erasability of 70.2 and an ink dischargeability of 90 were obtained for Epocolor FP-1050, the colorant described in Example 2 of Yoshioka et al. In contrast, a superior erasability of 72.1 and ink dischargeability of 120 were obtained when Epocolor FP-1050 was used and the particles having a size of not more than 1.8 μm were limited to not more than 1.6% by weight and particles having a size of not less than 7 μm were limited to not more than 0.5% by weight of the colorant. It is respectfully submitted that the increase in erasability from 70.2 to 72.1 and the increase in ink dischargeability from 90 to 120 would be considered significant to one of ordinary skill in the art. These results would be unexpected and surprising to a person of ordinary skill in the art based on the teachings of Yoshioka et al. Accordingly, it is respectfully submitted that Claim 1 (and all the claims ultimately dependent thereon) is not obvious in view of Yoshioka et al. In view of the foregoing, withdrawal of the rejection under 35 U.S.C. § 103(a) of Claims 1, 4, and 11-13 as obvious in view of Yoshioka et al. is respectfully requested.

Claims 5-8 have been rejected under 35 U.S.C. § 103(a) as obvious in view of Yoshioka et al. as applied to Claims 1, 4, and 11-15, and further in view of either U.S. Patent No. 4,471,079 (Enami) or U.S. Patent No. 5,977,211 (Koyama). The Examiner's position is that it would have been obvious to combine the teachings of Yoshioka et al. with the water-soluble polymer taught by Enami or Koyama to obtain the present invention.

However, it is respectfully submitted that Claims 5-8 are nonobvious and patentable in view of Yoshioka et al. as applied to Claims 1, 4, and 11-15, and further in view of either Enami or Koyama. Claims 5-8 depend on Claim 1, which, as discussed above, expressly recites a particle size distribution of 2 to 7 μm and wherein particles having a size of not more than 1.8 μm account for not more than 1.6% by weight of said colorant and wherein particles having a size of not less than 7 μm account for not more than 0.5% by weight of said colorant. In contrast, as discussed above, Yoshioka et al. does not disclose or suggest a size distribution as recited in Claim 1, which are critical to ink erasability and dischargeability, as shown in the enclosed 132 Declaration as discussed above. Koyama does not disclose or suggest a particle size distribution as recited in Claim 1, and Enami uses dyes as a colorant, so that the particle size of Enami is clearly under 2 μm . Therefore, neither Koyama nor Enami cures the deficiency of Yoshioka et al. Accordingly, it would not have been obvious to obtain the invention of Claims 5-8, which achieves excellent erasability and ink dischargeability with the particle size distribution recited in Claim 1, by combining the teachings of Enami and of Yoshioka et al. Accordingly, it is respectfully submitted that Claims 5-8 are not obvious in view of Yoshioka et al. as applied to Claims 1, 4, and 11-13, in combination with Enami or Koyama. In view of the foregoing, withdrawal of the rejection under 35 U.S.C. § 103(a) of Claims 5-8 as obvious in view of Yoshioka et al. in combination with Enami or Koyama is respectfully requested.

Claims 1, 4, 9-11, and 13 have been rejected under 35 U.S.C. § 103(a) as obvious in view of U.S. Patent No. 5,120,359 (Uzukawa et al.) in combination with

Yoshioka et al. The Examiner acknowledges that Uzukawa et al. does not teach the particle size distribution of the present invention, but takes the position that it would have been obvious to control the particle size of Uzukawa et al. in light of the teachings of Yoshioka et al. to obtain the present invention. The Examiner further states that U.S. Patent No. 5,976,232 (Gore) discloses that a narrow distribution of colorant particles improves the stability of the ink.

However, it is respectfully submitted that Claims 1, 4, 9-11, and 13 are nonobvious and patentable in view of Uzukawa et al. in combination with Yoshioka et al. Uzukawa et al. does not disclose or suggest a size distribution as recited in Claim 1. Furthermore, as discussed above, Yoshioka et al. does not teach that few, if any, of the particles have a size less than 2 μm (Official Action of July 24, 2001, p.7, lines 15-17) or greater than 5 μm (Official Action of July 24, 2001, p.8, lines 1-2). Gore merely states that a "narrow, more uniform size distribution" improves ink stability, but does not disclose or suggest a size distribution as recited in Claim 1. As discussed above, the particle size distribution of Claim 1 is critical to the excellent ink erasability and dischargeability of the ink composition. Accordingly, it is respectfully submitted that Claim 1 (and all the claims ultimately dependent thereon), which achieves excellent erasability and ink dischargeability with the particle size distribution recited in Claim 1, is not obvious in view of Uzukawa et al. in combination with Yoshioka et al. In view of the foregoing, withdrawal of the rejection under 35 U.S.C. § 103(a) of Claims 1, 4, 9-11, and 13 as obvious in view of Uzukawa et al. in combination with Yoshioka et al. is respectfully requested.

Claims 5-8 have been rejected under 35 U.S.C. § 103(a) as obvious in view of Uzukawa et al. in combination with Yoshioka et al. as applied to Claims 1, 4, 9-11, and 13, and further in combination with either Enami or Koyama. The Examiner's position is that it would have been obvious to combine the teachings of Uzukawa et al. and Yoshioka et al. with the water-soluble polymer taught by Enami or Koyama to obtain the present invention.

However, it is respectfully submitted that Claims 5-8 are nonobvious and patentable in view of Uzukawa et al. in combination with Yoshioka et al. as applied to Claims 1, 4, 9-11, and 13, and further in combination with either Enami or Koyama. Claims 5-8 depend on Claim 1, and, as discussed above, Uzukawa et al., alone or in combination with Yoshioka et al., does not disclose or suggest a size distribution as recited in Claim 1. Similarly, as discussed above, Koyama and Enami fail to disclose or suggest the size distribution recited in Claim 1 and therefore do not cure the deficiency of Uzukawa et al., alone or in combination with Yoshioka et al. Therefore, it would not have been obvious to obtain the invention of Claims 5-8, which achieves excellent erasability and ink dischargeability with the particle size distribution recited in Claim 1, by combining the teachings of Uzukawa et al., Yoshioka et al., and Enami or Koyama. Accordingly, it is respectfully submitted that Claims 5-8 are not obvious in view of Uzukawa et al. in combination with Yoshioka et al. as applied to Claims 1, 4, 9-11, and 13, and further in combination with either Enami or Koyama. In view of the foregoing, withdrawal of the rejection of Claims 5-8 under 35 U.S.C. § 103(a) as obvious in view of

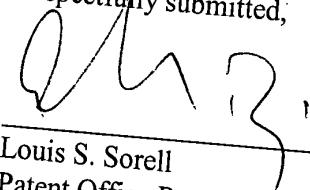
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Uzukawa et al. in combination with Yoshioka et al. as applied to Claims 1, 4, 9-11, and 13, and further in combination with either Enami or Koyama is respectfully requested.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with Markings to Show Changes Made."

In view of the foregoing amendments and remarks, allowance of all claims in the application is respectfully requested.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

Claims 14 and 15 have been canceled.